USSR

YAKUSHA, G. B., et al., Vopr. metodol. regional'n. ekon. prognozir. Novosibirsk,

1970, pp 207-221

development of an economic region and its energy base (types and capacities of
the generating sources, electric power network, power systems, and so on) are
determined by the presence of primary energy sources economically expedient and
practically accessible for development. Insurance of primary power sources and
prospective estimation of the initial energy base are acquiring special urgency
for regions having a highly developed multiple-branch economy characterized by
significant power consumption. The basic areas of development of power en-
gineering of the region permits the development of recommendations with re-
spect to scales of production of the power resources proper and those received
from the outside (fuel, electric power), the scales of development of atomic
power engineering, and so on. The most widespread tool of optimization of the
fuel and energy balance of the region is the production-distribution model
which permits optimization of the scales of extraction and production of local
forms of energy resources, distribution of the energy resources between indi-
vidual networks and consumers and also the placement scheme for the large elec-
tric power plants and internetwork flows of electric power. The bibliography
has 8 entries.

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- 102 -

UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--KINETICS AND MORPHOLOGY OF NONISOTHERMAL CRYSTALLIZATION IN
   POLYMERS DURING DEFORMATION -U-

AUTHOR-(04)-ATAKHODZHAEV, I.K., MANN, G., BARANOV, V.G.: FRENKEL, S.YA.

COUNTRY OF INFO--USSR

SOURCE--FASERFORSCH. TEXTILTECH. 1970, 21(4), 145-52

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--CRYSTALLINE POLYMER, POLYETHYLENE, POLYPROPYLENE, THERMAL
   EFFECT, X RAY STUDY, SPHERULITE, STRESS DISTRIBUTION, CRYSTALLIZATION,
   MATERIAL DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1247   STEP NO--GE/0083/70/021/004/0145/0152

CIRC ACCESSION NO--AP0116709
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116709

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOST IMPORTANT PROCESSES
AFFECTING THE NONISOTHERMAL CRYSTN. OF TYPICAL CRYST. POLYMERS (I.E.,
LOW OR HIGH D. POLYETHYLENE AND ISOTACTIC POLYPROYLENE) UNDER TENSION
WERE EXAMD., CONSIDERING QUANT. THE EFFECTS OF TEMP. AND STRESS
VARIATIONS ALONG THE DEFORMATION REGION. THE RESULTS OBTAINED BY X RAY
ANAL. AND OPTICAL ANAL. ARE DISCUSSED. REFERRING TO PREVIOUS DATA ON
POLYMER CRYSTN. KINETICS AND MORPHOL. AND THE FLATTENING OF SPHERULITES.
      FACILITY: INST. HOCHMOL. VERBINDUNGEN, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 519.9

MANN, K.

"Synthesis of Optimal Controls in a Linear Differential Game With a Quadratic
Nonuniform Functional of the Reward

Novosibirsk, Sibirskiy Matematicheskiy Zhurnal, vol 13, No 3, 1972, pp 596-603
Abstract: This paper represents a further exploration of the method
developed in an earlier paper (Yakubovich, V. A., C sinteze opti-
mal'nykh upravleniy v lineynoy differentsial'noy igre s kvadratich-
nym funktsionalom platezha -- Synthesis of Optimal Controls in a
Linear Differential Game With a Quadratic Functional of the Reward -- Dokl.
AN SSSR, 195, No 2, 1970, pp 296-299) for dealing with the same problem. It
also uses the results obtained by another paper (Yakubovich, V. A., Resheniye
odnoy algebraicheskey zadachi, vstrechayushcheysya v teorii upravleniya --
Solution of an Algebraic Problem Encountered in Control Theory -- Dokl. AN SSSR,
193, No 1, 1970, pp 57-60). Under the rules of the game, the first player
tries to minimize the functional of the reward while the second tries to
maximize it. The author of the present paper finds that his results are more
general than those of the first Yakubovich article cited above.

1/1

1/2   013   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--METHOD FOR OBTAINING
   O,ALKYL,ARYL,SE,ALKYL,ARYL,ALKYLSELENOPHOSPHONATES -U-
AUTHOR-(02)-KATAYEV, YE.G., MANNAFOV, T.G.

COUNTRY OF INFO--USSR

SOURCE--AUTHOR CERTIFICATE NR 262903
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, NR 7,
DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSELENIUM COMPOUND, ORGANIC PHOSPHORUS COMPOUND, CHEMICAL
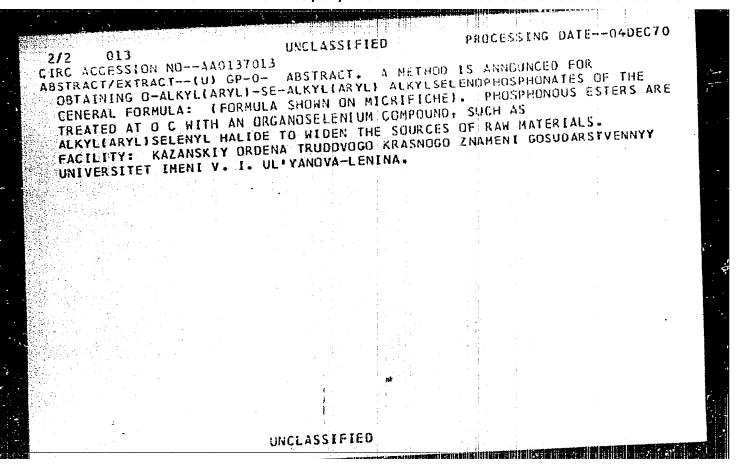   SYNTHESIS, PHOSPHONATE ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1773   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137013
                   UNCLASSIFIED

2/2   013
CIRC ACCESSION NO--AA0137013
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS ANNOUNCED FOR
OBTAINING O-ALKYL(ARYL)-SE-ALKYL(ARYL) ALKYLSELENOPHOSPHONATES OF THE
GENERAL FORMULA: (FORMULA SHOWN ON MICRIFICHE). PHOSPHONOUS ESTERS ARE
TREATED AT O C WITH AN ORGANOSELENIUM COMPOUND, SUCH AS
ALKYL(ARYL)SELENYL HALIDE TO WIDEN THE SOURCES OF RAW MATERIALS.
FACILITY: KAZANSKIY ORDENA TRUDOVOGO KRASNOGO ZNAMENI GOSUDARSTVENNYY
UNIVERSITET IMENI V. I. UL'YANOVA-LENINA.

TITLE--IMPEDANCE OF THE CEREBRAL CORTEX IN RELATION TO THE NONSYNAPTIC
  ACTION OF BIOPOTENTIALS -U-

AUTHOR-(03)-CHIRKOV, V.D., KUZOVLEV, V.V., MANNANNIKOV, A.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, BIOFIZIKA, NO 1, 1970, PP 84-88

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREBRAL CORTEX, ELECTRIC IMPEDANCE, ALKALOID, NEURONE,
  BIOPOTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0848   STEP NO--UR/0217/70/000/001/0084/0088

CIRC ACCESSION NO--AP0121480
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0121480
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPEDANCE WAS MEASURED IN INTACT
AND ISOLATED PORTIONS OF THE CEREBRAL CORTEX OF ADULT CATS AT
FREQUENCIES RANGING FROM 50 TO 1,500 HZ. STRYCHNINE (1 PERCENT
SOLUTION) WAS APPLIED TO THE NORMAL CORTEX OF SIX OF THE ANIMALS. THE
STRYCHNINIZED CORTEX, WHERE EPILEPTIFORM DISCHARGES OCCUR, WAS FOUND TO
HAVE LESS IMPEDNACE THAN IN TIS NORMAL STATE. THE IMPEDANCE OF THE
ISOLATED PORTION OF CORTEX WAS HIGHER THAN THAT OF INTACT NEOCORTEX.
ALTHOUGH THE RAPID CELLULAR POTENTIALS PROVIDE BETTER PHYSICAL
CONDITIONS FOR PROPAGATION THROUGH BRAIN TISSUE, THE SLOW SUMMARY WAVES
CAN ACT OVER LARGER DISTANCES. THE INCREASED CONDUCTIVITY OF THE
STRYCHNINIZED CORTEX IS ASCRIBED TO THE INCREASE IN ION PERMEABILITY OF
THE NERVE CELL MEMBRANES, WHEREAS THE DECREASE IN CONDUCTIVITY OF THE
ISOLATED CORTEX SEEMS TO BE DUE TO REDUCTION IN THE MEMBRANE CHARGE.
THUS, SLOW ELECTRONIC WAVES MAY DIRECTLY INFLUENCE THE FUNCTION OF NERVE
ELEMENTS FOR A CONSIDERABLE DISTANCE, BUT THE RAPID POTENTIALS ACT ON
THE NEURONS LOCATED VERY CLOSE TO THE POINT OF ORIGIN. IN.
FACILITY: GORKY MEDICAL INSTITUTE IMENI S. M. KIROV.

1/2   017   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--REACTION OF BENZOYL AND TRICHLOROACETYL ISOCYANATES WITH SCHIFF
   BASES -U-
AUTHOR-(02)-ARBUZOV, B.A., MANNANOV, M.KH.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM, 1970, (3), 617-21

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, ORGANIC ISOCYANATE, SCHIFF BASE, KETONE,
   ORGANIC SYNTHESIS, AMINE DERIVATIVE, CHLORINATED ORGANIC COMPOUND,
   FLUORINATED ORGANIC COMPOUND, UREA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0734   STEP NO--UR/0062/70/000/003/0617/0621

CIRC ACCESSION NO--AP0124404
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0124404
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BZNCO AND BENZALBENZYLAMINE (I) IN
ET SUB2 O REACTED UNDER CO SUB2 TO FROM IN 2 DAYS 90PERCENT
2,6,**PHENYL,3,BENZYL,3,4,DIHYDRO,2H,2,OXA,3,5,DIAZIN,4,ONE, M.
124DEGREES. THIS AND DIOXANE WITH A TRACE OF CONCD. HCL HEATED 15 MIN
GAVE 80PERCENT N,BENZOYL,N PRIME,BENZYLUREA, M. 168DEGREES, ALSO PREPD.
FROM BZNCO AND PHCH SUB2 NH SUB2 IN ET SUB2 O.   BZNCO AND
P,DIMETHYLAMINOBENZALBENZYLAMINE IN ET SUB2 O SIMILARLY GAVE 80PERCENT
2,(P,DIMETHYLAMINOPHENYL),3,BENZYL,6,PHENYL,3,4,DIHYDRO,2H,1,OXA,3,5,DIA
ZINE,4,ONE, M. 116-18DEGREES. P,CHLOROBENZALBENZYLAMINE GAVE SIMILARLY
85PERCENT
2,(P,CHLOROPHENYL),3,BENZYL,6,PHENYL,3,4,DIHYDRO,2H,1,OXA,3,5,DIAIN,4,O
NE, M.   107-8DEGREES: SIMILARLY WERE PREPD. 75PERCENT 2,(P,BROMOPHENYL)
ANALOG, M. 110-11DEGREES: AND P,ANISYL ANALOG, M. 105-7DEGREES.
REACTION OF CCL SUB3 CONCO WITH I GAVE 80PERCENT
2,PHENYL,3,BENZYL,6,TRICHLOROMETHYL,3,4,DIHYDRO,2H,1,OZA,3,5,DIZAIN,4,ON
E, M. 151-3DEGREES, WHICH HEATED IN ME SUB2 CO-HCL 10 MIN GAVE
N,TRICHLORUACETYL,N PRIME,BENZYLUREA, M. 106DEGREES, ALSO PREPD. FROM
CCL SUB3 CONCO AND PHCH SUB2 NH SUB2.   FACILITY: KAZAN. GOS.
UNIV. IM. UL'YANOVA LENINAL, KAZAN, USSR.

UNCLASSIFIED

USSR   UDC 621.315.592:546.22'48

MANNANOVA, KH.KH., NIYAZOV, KH.R.

"Experimental Determination Of The Coefficients Of Radiation-Stimulated
Diffusion Of Sulphur In Cadmium Sulfide"

V sb. Metod radiats. vozdeystviy v issled. struktury i svoystv tverdykh tel
(Radiative Effect Method In Study Of The Structure And Properties Of Solid
Bodies--Collection Of Works), Tashkent, "Fan," 1971, pp 72-81 (from
RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 45117)

Translation: The effect is studied of the intensity of ionizing radiation on
the coefficient of radiation-stimulated diffusion, after irradiation on
sources with a dosage rate of 110--7000 R/sec at temperatures of 45--80° C.
With the object of clarifying the diffusion mechanism, CdS crystals are studied,
released in advance from free S by heat treatment, which were subjected to
neutron irradiation and heated 10 hours at 600° C in the presence of S. The
data obtained indicate the advantage of a vacancy mechanism of diffusion of S
in CdS. 10 ref. V.G.

1/1

USSR

UDC 669.18-147;621.746.393

KISSIL', N. YE., MANOKHIN, A. I., and LEYTES, A. V., Elektrostal', Plant and Central Scientific Research Institute of Ferrous Metallurgy

"Solidification of Round Continuous-Cast Ingots Made of Heat-Resistant Nickel Alloys"

Moscow, Stal', No 8, Aug 73, pp 699-700

Abstract: Heat-resistant nicekl-base alloys differ substantially from ordinary carbon steels by their thermophysical properties (liquidus and solidus temperatures, latent heat of crystallization, etc.) which manifest certain features in their solidication. In round continuous-cast ingots with diameters of 100-170 mm it was theoretically and experimentally established that crust thickness in the irital stage of solidification (up to a thickness 30-40% of the radius) does not grow by the conventional square root law with time but by another law close to the linear law. The method of the experiments on a continuous casting unit and calculations are described. Four figures.

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USSR   UDC: 669.189:621.746.7.001

BORISOV, V. T., VINOGRADOV, V. V., DUKHIN, A. I., MANOKHIN, A. I.,
MATVEYEV, YU. YE., SOKOLOV, L. A. and SHISHKOV, V. T., (Moscow)

"Applicability of the Quasi-Equilibrium Two-Phase Zone Theory to the
Description of Ingot Crystallization"

Abstract: Increasing the requirements on metal quality necessitates more
intimate knowledge and in-depth analysis of the fine points of alloy
crystallization phenomena. Noteworthy, in this case, is the study of the
quasi-equilibrium two-phase zone of an alloy -- a region in which thermal,
diffusion, and other processes accompanying the formation of the ingot's
structure take place. This study is an attempt to test the applicability
of the theory to computer analysis of the crystallization of a metal ingot.
Described is a crystallizer designed for the study of thermal conditions
in the two-phase zone of an ingot for crystallization at both low and high
cooling rates. A mathematical arrangement is proposed characterizing a
crystallizing ingot in terms of the new theory. The correlation of the
theoretical results with the experimental data indicates that the proposed

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USSR

BORISOV, V. T., et al. Izvestiya Akademii nauk SSSR, Metally, no 6,
Nov-Dec 71, pp 104-109

mathematical model provides both qualitative and quantitative patterns of
the thermal and other real conditions of ingot crystallization.
(2 illustrations, 13 bibliographic references).

2/2

USSR.

UDC 669.71.004.2

GEORGIYEVSKII, Yu. I., MANOKHA, I. Ye.

"Device for Automatic Analysis of Aluminum Electrolyzer Anode Gases"

Avtomatiz Khim. Proiz-v [Automation of Chemical Production -- Collection of Works], No 8, Kiev, Nauk Dumka Press, 1971, pp 189-193. (Translated from Referativnyy Zhurnal Metallurgiya, No 2, 1972, Abstract No. 2G172 by S. Krivonosova).

Translation: The design and operating principle are described of an industrial installation for collection, purification, and analysis of anode gas. The gas from the anode of an electrolyzer, with a pressure of 200-500 mm Hg,, passes through a gas collection tube, gas line, and 3-element filter, where it is cleaned of dust, impurity AlF_3 particles, and other substances. As it passes through the first and second chemical filters, the gas is purified of compounds of F. A bubbler between the filters scours a portion of the gas, stabilizing the head at 200 mm Hg. The gas then passes through a test filter to the measuring chamber of a gas analyzer, which produces an electric signal proportional to the CO_2 concentration. Tests of the device have shown that the zero drift decreased over 10 days' operation to 1% (in comparison to 5-7% with the ordinary method of analysis); the duration of operation of the sensing elements of the gas analyzer was increased by a factor of 3, of the ceramic filter -- by a factor of 5; the accuracy of indications was increased by

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USSR

UDC 669.71.004.2

GEORGIYEVSKII, Yu. I., MANOKHA, I. Ye., Avtomatiz Khim. Proiz-v, No 8, Kiev, Nauk Dumka Press, 1971, pp 189-193.

stabilization of the flow. 1 fig; 2 biblio refs.

2/2

- 20 -

USSR   UDC 669.71.472(088.8)

GEORGIYEVSKIY, YU. I., ZARECHNYY, V. F., BALASHOV, I. I., MANOKHA, I. YE., EUTS, L. YA.

"Method of Varying the Pole   Spacing in an Aluminum Electrolyzer"

USSR Author's Certificate No 273040, Filed 10 Jun 67, Published 21 Sep 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G157P)

Translation: A procedure is proposed for varying the pole spacing in an aluminum electrolyzer by vertical displacement of the anode. In order to improve the accuracy of varying the pole spacing, after completion of the command from the control agent to shift the anode downward, a direct current is fed to the stator of the anode drive motor for instantaneous halting of the anode.

1/1

USSR   UDC 669.71.472(088.8)

GEORGIYEVSKIY, Yu. I., BALASHOV, I. I., ZARECHNYY, V. F., and MANOKHA, I. Ye.

"Method of Determining the Anode Effect on Aluminum Electrolyzers"

USSR Author's Certificate No 272568, Filed 8/07/66, Published 7/09/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G144 P)

Translation: A method is suggested for determining the anode effect on
aluminum electrolyzers. The first derivative of Al yield per current
with time is measured in order to predict the anode effect phenomenon,
and an approximation of the anode effect is determined from the magnitude
and sign of this Al yield.

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10

USSR   UDC 669.71.472(088.8)

GEORGIYEVSKIY, YU. I., ZARECHNYY, V. F., BALASHOV, I. I., MANOKHA, I. YE.

"Procedure for Regulating the Operation of Aluminum Electrolyzers"

USSR Author's Certificate No 235337, Filed 14 Jul 67, Published 8 Oct 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G155P)

Translation: A procedure is proposed for regulating the operation of Al-electrolyzers by the maximum CO_2 concentration in anode gases by means of an extremal step-by-step search. In order to save electric power, at the beginning of the search a trial shift of the anode downward is made, and in case the CO_2 concentration drops in the anode gases the anode is gradually shifted upward to the maximum value of the CO_2 concentration in the anode gases.

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– 14 –

UDC 669.71.011.56(088.8)

USSR

GEORGIYEVSKIY, YU. I., ZARECHNYY, V. F., BALASHOV, I. I., MANOKHA, L. YE., and BOYKO, V. N.

"Device for Calculating Anode Effects During Automated Control of the Operation of Aluminum Electrolyzers"

USSR Author's Certificate No 276442, Filed 13 Sep 67, Published 12 Oct 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G121P)

Translation: The device consists of a regulator and a unit for disconnecting the electrolyzer from the regulator at the anode effect time. In order to prevent anode effects and the consequences on the regulation process, a series-connected anode gas composition sensor and differentiator are introduced into the device. The differentiator output is connected to the electrolyzer regulator control system.

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USSR

UDC 621.746.5:669.14.018.821

KANOKHIN, A. I., MATEVOSYAN, YE. P., KUL'KOVA, M. N., RUBENCHIK, A. YE., and BELYAKOVA, K. V., Central Scientific Research Institute of Ferrous Metallurgy and Krasnyy Ok:yabr' Plant

"Nonmetallic Inclusions and Excess Phases in Steel Kh23N18 From Continuous and Conventional Pouring"

Moscow, Stal', No 10, Oct 73, pp 932-934

Abstract: The formation and distribution of nonmetallic inclusions (oxides, sulfides) and excess phases (carbides of the type $He_{23}C_6$ and He_7C_3) depend on crystallization conditions. It was established in a study of continuous (175 x 600-mm cross section) and conventional (4.1-ton) ingots of Kh12N18 steel, produced at the Krasnyy Oktybar' Plant and at the Central Scientific Research Institute of Ferrous Metallurgy, that, in the first case, the non-metallic inclusions and excess phases were distributed along the cross section and height of an ingot in a more uniform manner and their number as a whole was less. A continuously cast steel is somewhat more contaminated with oxides than steel poured in the conventional manner (mainly coarse exogenic inclusions the entry of which can be prevented by better organization of the continuous casting process). Two figures, two tables, five bibliographic references.

1/1

PROCESSING DATE--18SEP70

UNCLASSIFIED

1/2   016
TITLE--FORMATION OF A CONTINUOUS INGOT -U-

AUTHOR-(02)-MANOKHIN, A.I., SOKOLOV, L.A.

COUNTRY OF INFO--USSR

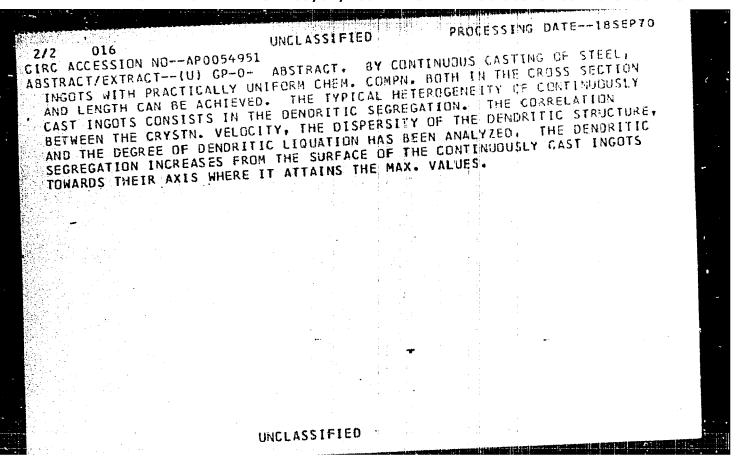SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 91-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CONTINUOUS CASTING, METAL CRYSTALLIZATION, METAL INGOT, CAST STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0155   STEP NO--UR/0370/70/000/001/0091/0094

CIRC ACCESSION NO--AP0054951
UNCLASSIFIED

2/2   016
CIRC ACCESSION NO--AP0054951
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY CONTINUOUS CASTING OF STEEL,
INGOTS WITH PRACTICALLY UNIFORM CHEM. COMPN. BOTH IN THE CROSS SECTION
AND LENGTH CAN BE ACHIEVED. THE TYPICAL HETEROGENEITY OF CONTINUOUSLY
CAST INGOTS CONSISTS IN THE DENDRITIC SEGREGATION. THE CORRELATION
BETWEEN THE CRYSTN. VELOCITY, THE DISPERSITY OF THE DENDRITIC STRUCTURE,
AND THE DEGREE OF DENDRITIC LIQUATION HAS BEEN ANALYZED. THE DENDRITIC
SEGREGATION INCREASES FROM THE SURFACE OF THE CONTINUOUSLY CAST INGOTS
TOWARDS THEIR AXIS WHERE IT ATTAINS THE MAX. VALUES.

USSR

YEGOROV, N. V., FURSEY, G. N., and NANOKHIN, S. P.

"Generality of the Basic Principles in the Autoelectron Emission
of n- and p-Type Semiconductors"

Leningrad, Fizika Tverdogo Tela, vol. 13, No. 10, October 1971,
pp 3110-3112

Abstract: It is shown that the appearance of a saturation region
in the Fowler-Nordheim curves is a principle which is character-
istic of both p-type and n-type semiconductors. The specimens
used for the experiments in which this finding was made were
of high-resistance n-Si with a resistivity of 300 ohm·cm. The
results of the experiments are given in the form of two curves.
These results agree closely with the theoretical representations
of semiconductor autoelectron emission, as developed in earlier
work, and confirm the generality of the basic principles in p-type
and n-type semiconductor autoemission.

1/1

TITLE--INVESTIGATION OF THE SATURATION OF A REGENERATIVE SEMICONDUCTOR
  PARAMETRIC AMPLIFIER IN THE CURRENT MODE -U-
AUTHOR-(03)-MANUKHIN, V.M., STRUKOV, I.A., ETKIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--RADIOEKHNIKA I ELEKTRONIKA, VOL. 15, MAY 1970, P. 1068-1076

DATE PUBLISHED----MAY70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PARAMETRIC AMPLIFIER, SEMICONDUCTOR AMPLIFIER, HARMONIC
  ANALYSIS, ELECTRIC CONDUCTANCE, PN JUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0280   STEP NO--UR/0109/70/015/000/1068/1076

CIRC ACCESSION NO--AP0124039
                    UNCLASSIFIED

2/2   038
CIRC ACCESSION NO--AP0124039
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE SATURATION OF
A REGENERATIVE SEMICONDUCTOR PARAMETRIC AMPLIFIER IN THE FORWARD CURRENT
MODE OF OPERATION, ASSUMING THE ACTION OF THREE HARMONIC VOLTAGES
(SIGNAL FREQUENCY, PUMPING FREQUENCY, AND THE DIFFERENCE FREQUENCY) AT
THE P-N JUNCTION. THE SATURATION IN THIS MODE OF OPERATION IS CAUSED BY
TWO MECHANISMS ASSOCIATED WITH (1) A CONDUCTANCE INTRODUCED IN THE
PUMPING LOOP, WITH A POSITIVE ACTIVE PART, AND (2) DETUNING EFFECTS
ARISING IN ALL THE LOOPS DUE TO A CHANGE IN THE PUMPING VOLTAGE LEVEL.
THE DYNAMIC RANGE IN THE FORWARD CURRENT MODE IS AN ORDER OF MAGNITUDE
SMALLER THAN THE RANGE IN THE BLOCKED JUNCTION MODE (AT EQUAL SMALL
SIGNAL GAIN AND PUMPING POWER).

USSR

UDC: 621.375.7:621.382

MANOKHIN, V. M., Strukov, I. A., and Etkin, V. S.

"Investigating the Saturation of Regenerative Semiconductor Para-
metric Current Amplifiers"

Moscow, Radiotekhnika i Elektronika, No. 5, 1970, pp 1068-1075

Abstract: This paper investigates the saturation power of the
amplifier named in the title when the amplifier is operating in
the current regime. The assumption is made that three harmonic
voltages -- the signal frequency, the difference frequency, and
the pumping frequency -- are acting on the p-n junction. The
authors begin their analysis with the experimentally determined
fact that with the application of a positive bias voltage to the
p-n junction, an excess capacitance appears which is an expoential
function of the applied voltage. This capacitance is in parallel
with the barrier capacitance, so that the total capacitance of
the two is equal to the sum of their individual capacitances. The
equivalent circuit of the amplifier is given. It has three reso-
nant circuits, each connected to the parametric diode capacitance,
and each tuned to one of the three frequencies named above. A
1/2

USSR

MANOKHIN, V. M., et al, Radiotekhnika i Elektronika, No. 5, 1970,
pp 1068-1076

formula is obtained for the diode admittance in the current re-
gime, and the barrier capacitance with saturation is computed.
The authors conclude that their method for computing the satura-
tion power of the amplifier agrees with the experimental data.

2/2

- 2 -

TITLE--MOLECULAR NITROGEN FIXATION BY ACELLULAR EXTRACTS OBTAINED FROM
BACTEROIDS OF LUPINUS LUTEUS MODULES -U-
AUTHOR-(04)-MANORIK, A.V., STARCHENKOV, E.P., DATSENKO, V.K., YAKOVLEVA,
N.S.
COUNTRY OF INFO--USSR

SOURCE--AOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(2), 177-82

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEGUME CROP, PLANT PHYSIOLOGY, NITROGEN ISOTOPE, BACTERIA,
CHEMICAL LABELLING, ADENOSINE TRIPHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1220   STEP NO--BU/0442/70/032/002/0177/0182

CIRC ACCESSION NO--AT0134894
                        UNCLASSIFIED

2/2   010
CIRC ACCESSION NO--AT0134894
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLYING PRIMEL5 N TECHNIQUES,
CRUDE ACELLULAR AND BIO GEL EXTS. OF BACTERIODS OF L. LUTEUS NODULES
SHOWED A N FIXATION OF 244.4 MU G OF N PER MIN PER MG OF PROTEIN,
PROFIDED THE REACTION MIXT. CONTAINS AN EXCESS OF AN ATP REGENERATING
SYSTEM, MG PRIMEPOSITIVE POSITIVE, AND NA SUB2 S SUB2 O SUB4 IN THE
PRESCENCE OF POLYCAPROLACTAM (I). WHEN PHENOL COMPOS. ARE NOT
ELIMINATED FROM EXTS. THE FIXING ABILITY DECREASES TO 27 MU G OF N PER
MIN PER MG OF PROTEIN, AND STOPS ALTOGETHER WHEN I IS REVOED. THE POS.
N FIXATION BY A CRUDE EXT. IN THE PRESENCE OF CREATINE (CR) AND CREATINE
PHOSPHOKINASE MAY BE EXPLAINED BY THE REACTION OF ATP WITH CREATINE WITH
THE FORMATION OF CREATINE PHOSPHATE (CRP) AND ADP. AS A RESULT, ADP
WHICH IS AN INHIBITOR OF N FIXATION, IS NOT ACCUMULATED IN THE REACTION
MIXT. WITH CR AND CRP IN THE REACTIONS MIXT., N FIXATION IS DOUBLED.
FACILITY: INST. FIZIOL. ROSLIN, KIEV, USSR.

UDC 621.398

USSR

OL'KHOVSKIY, YU. B., NOVOSELOV, O. N., and MANOVTSEV, A. P.

"Telemetry Data Compression"

Szhatiye dannykh pri teleizmereniyakh (cf. English above), Moscow, "Sov. radio" (Soviet Radio), 1971, 303 pp, ill, 1 r. 24 k. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 72, Abstract No 1A267K from the annotation)

Translation: The book is the first monograph on the problem of telemetry data compression and summarizes a number of investigations by Soviet and foreign researchers. The authors set forth from an engineering standpoint questions relating to quasireversible data-compression methods which will make possible subsequent retrieval of telemetered parameters. Some results are original and have to do mainly with two aspects -- mathematical and technical -- of the compression problem. A comparative analysis is given of interpolation and extrapolation algorithms making possible real-time data compression. Special attention is given to engineering feasibility of the algorithms. For the first time methods are set forth for the construction of efficient data-compression algorithms with two-parameter adaptation, based on the use of non-orthogonal, orthogonal, and eigenfunctions. Programs (in ALGOL-60 language)

1/2

USSR

OL'KHOVSKIY, YU. B., et al., Szhatiya dannykh pri teleizmereniyakh, 1971, 303 pp.

are presented and some estimates made of the efficiency of data-compression algorithms from the results of modeling them on general-purpose digital computers. The book is intended for engineers dealing with questions of automatic data processing, compact representation, storage, documentation and display, as well as for scientists, teachers in the schools of higher learning, and students. Ten illustrations: 10 tables; bibliography with 202 titles.

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Information Theory

USSR

UDC 621.398:621.391

OL'KHOVSKIY, YURIY BORISOVICH; NOVOSELOV, OLEG NIKOLAYEVICH; MANCVTSEV, ANATOLIY PETROVICH

"Data Compression During Telemetering"

Szhatiye dannykh pri teleizmereniyakh (of English above), Moscow, "Sov.radio," 1971. 303 pp. 61 fig. 10 tab. 202 ref. 1 r 24 k.

Abstract: The book is the first monograph on the problem of telemetering data compression and it generalizes a number of studies by native and foreign authors. From an engineering position problems are stated pertaining to quasi-inverse methods of data compression and to guaranteeing subsequent restoration of parameters which are telemetered. Some results are original and pertain primarily to two aspects of the problem of compression -- the mathematical and technical. A comparative analysis is given of the interpolation and extrapolation of algorithms, guaranteeing data compression in a real scale of time. Particular attention is paid to algorithms realizable by engineering. For the first time methods are stated for the construction of effective algorithms of data compression with two-parametric adaptations based on the use of nonorthogonal, orthogonal and eigen-functions. A program is presented (in Algol-60 language) and some evaluations are given of the effectiveness of algorithms of data compression

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USSR

OL'KHOVSKIY, YURIY BORISOVICH, Szhatiye dannykh pri teleizmereniyakh, Moscow, "Sov. radio," 1971, 303 pp. 61 fig. 10 tab. 202 ref. 1 r 24 k.

with respect to the results of their modelling on a general-purpose digital computer. The book is intended for engineers occupied with problems of automatic processing, compact presentation, storage, documentation and representation of information, and also for scientific workers, teachers of higher schools, and students.

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USSR

OL'KROVSKIY, YURIY BORISOVICH, Szhatiye dannykh pri teleizmereniyakh, Moscow, "Sov. radio," 1971, 303 pp. 61 fig. 10 tab. 202 ref. 1 r 24 k.

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USSR

OL'KHOVSKIY, YURIY BORISOVICH, Szhatiye dannykh pri teleizmereniyakh, Moscow, "Sov. radio," 1971, 303 pp. 61 fig. 10 tab. 202 ref. 1 r 24 k.

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USSR

OL'KHOVSKIY, YURIY BORISOVICH, Szhatiye dannykh pri teleizmereniyakh, Moscow,
"Sov. radio," 1971, 303 pp. 61 fig. 10 tab, 202 ref. 1 r 24 k.

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USSR

OL'KHOVSKIY, YURIY BORISOVICH, Szhatiye dannykh pri teleizmereniyakh, Moscow, "Sov. radio," 1971, 303 pp. 61 fig. 10 tab. 202 ref. 1 r 24 k.

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USSR

OL'KHOVSKIY, YURIY BORISOVICH, Szhatiye dannykh pri teleizmereniyakh, Moscow, "Sov. radio," 1970, 303 pp. 61 fig. 10 tab. 202 ref. 1 r 24 k.

UDC 519.2:621.391

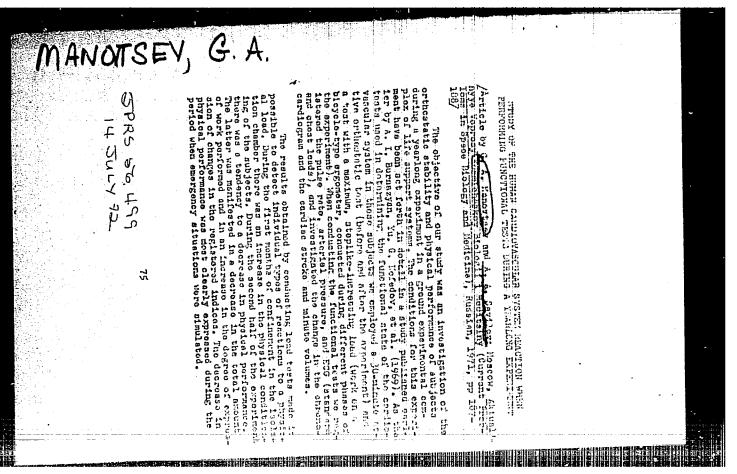USSR

MANOVTSEV, A. P. and MEDVEDEV, V. I.

"Methods of Compressing the Volume of the Results of Measuring Certain Statistical Characteristics of Random Processes"

Leningrad, Metody predstavleniya i apparaturn, analiz sluchayn. protsessov i poley. 3-y Vses. simpozium. Sekts. 2 -- Sbornik (Methods of Display and Machine Analysis of Random Processes and Fields, Third All-Union Symposium, Section 2 -- Collection of Works), 1970, pp 13-17 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V227, by Ya. Kogan)

Translation: Under the condition that the observer is a considerable distance from the object observed, an algorithm for the irreversible representation of a random process was considered for the case in which the goals of the analysis are the evaluations of the correspondence of the type of the distribution of the process and its first moments. The proposed algorithm is based on the use of percentage points of the distribution. It is assumed that the process investigated is a quasisteady state, with normal one-dimensional distribution.

1/1

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MANOTSEV, G. A.

SPRS No. 499
14 JULY 72

75

STUDY OF THE HUMAN CARDIOVASCULAR SYSTEM REACTION WHEN
PERFORMING FUNCTIONAL TESTS DURING A YEARLONG EXPERIMENT

The objective of our study was an investigation of the orthostatic stability and physical performance of subjects during a yearlong experiment in a ground experimental complex of life support systems. The conditions for this exp... plex have been set forth in detail in a study published ear... ment... by A. I. Burnazyan, Yu. G. Loredov, et al. (1969). As the... tests used in determining the functional state of the cardio... vascular system in those subjects we employed a 30-minute... tive orthostatic test (before and after the experiment) are... a test with a maximum, steplike-increasing load (work on a bicycle-type ergometer, conducted during different phases of the experiment). When conducting the functional tests we ... istered the pulse rate, arterial pressure, and ECG (inter... and chest leads), and investigated the change in the chrono... cardiogram and the cardiac stroke and minute volumes.

The results obtained by conducting load tests made it possible to detect individual types of reactions to a physic... al load. During the first months of confinement in the isola... tion chamber there was an increase in the physical conditio... ing of the subjects. During the second half of the experiment there was a tendency to a decrease in physical performance. The latter was manifested in, a decrease in the total amount of work performed and in an increase in the degree of exhaus... sion of changes in the registered indices. The decrease in physical performance was most clearly expressed during the period when emergency situations were simulated.

Acc. Nr:
AP0047366

Abstracting Service:
GEOPHYSICAL ABS

Ref. Code:
UR0065

91899a Precise method for recalculating the boiling points of petroleum fractions. Manovyan, ___: Khachaturova, D. A. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), __-_ (Russ). For improving the precision of the data obtained by GOST 10120-62 and 11011-64 to recalc. the vacuum b. detd. exptl. into that at normal pressure, a correction graph was applied. At 2-3 mm without applying the graph, a reading error of 0.5 mm gave a b. error of $\geq 20°$ and at 0.2 mm, the error could reach 40°. The correction graph, based on exptl. data, reduced these errors to max. 5°. Thus, the b. at 760 mm, obtained according to GOST from the b. detd. exptl. by vacuum distn., was put on the abscissa of the graph, detg. the correction for the pressure at which the vacuum distn. was made.
GGJR

REEL/FRAME
19790892

UDC 621.382.2:621.317.799

USSR

LAVRENKO, YU. YE., MANOYLOV, V.F.

"Measurement Of Impedance Of Microwave Diode With Help Of Non-Matched T-Bridge"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Proceedings Of The All-Union Scientific-Technical Conference On Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 47-49 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B512)

Translation: An account is given of a method for measuring the impedance of parametric diodes with the help of a reflectometer, in the circuit of which a non-matched double waveguide T-junction is included for increasing the precision of measurement. The results of the experimental test of the method show its applicability for series measurements. 1 ill. 4 ref. N.S.

1/1

USSR

IVANOV, S. N., MANSFEL'D, G. D., Institute of Radio Engineering and Electronics,
Academy of Sciences USSR, Moscow

"Interaction of Sound, at a Frequency of 9.4 GHz, With Hot Electrons in n-InSb"

Abstract: The characteristic features of electron absorption of hypersonic waves
at a frequency of 9.4 GHz in indium antimonide crystals at liquid helium tempera-
tures were investigated in constant and pulsed electric fields. It was known
that the interesting phenomenon of the heating of free electrons by an electric
field is very clearly expressed in this temperature region, and it was expected
that the functional relationship between electron absorption and the field would
be very complex since the degree of electron absorption when a field $\alpha_e(E)$ is

applied to the crystal is determined not only by the drift of carriers but also
by their heating. It is shown that in slightly degenerate indium antimonide the
heating of an electron gas by a field determines to a considerable degree the
electron absorption of sound. A quantitative interpretation of the results is

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USSR

IVANOV, S. N., MANSFEL'D, G. D., Fizika tverdoge tela, No. 5, May 71, pp 1288-1292

given. It is concluded from the experiments that consideration of the heating of an electron gas by an electric field in slightly degenerate indium antimonide at helium temperatures makes it possible to interpret uniquely the results of experiments on the effect of an electric field on electron absorption of sound within the framework of existing theories. According to the data obtained here, the heating of an electron gas considerably lowers the effectiveness of electron-phonon interaction, although it is still possible to obtain very considerable coefficients of electron amplification, which in these experiments were as high as ∿60 db/cm.

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USSR

UDC 534.232.46-8

GULYAYEV, Yu.V., IVANOV, S.N., MANSFEL'D, G.D., PROKLOV, V.V., STANKOVSKIY, B.A., STEPANOV, B.G. [In-t radiotekhn. i radioelektron. AN SSSR--Institute Of Radio Engineering And Radio Electronics, AS, USSR]

"Ultrasonic High-Frequency Transducer"

USSR Author's Certificate No 250554, Filed 5 July 67, Published 16 Jan 70 (from RZh--Elektronika i yeye primeneniya, No 8, August 1970, Abstract No 8A347P)

Translation: An ultrasonic high-frequency transducer patented for use in ultrasonic delay lines and ultrasonic amplifiers contains a resonator and a piezosemiconductor crystal involving a layer stripped of charge carriers. With the object of obtaining ultrasonic oscillations of ultra-high frequency, the piezosemiconductor crystal is connected with the central core of the resonator by a thin dielectric layer (e.g., mica) and a controlled voltage source is connected to the central core of the resonator and to the crystal. 1 ill. L.K.

1/1

UNCLASSIFIED   PROCESSING DATE--18SEP70

TITLE--EXCITATION OF SOUND IN THE NEAR SURFACE LAYER OF GALLIUM ARSENIDE
CRYSTALS -U-

AUTHOR-(02)-IVANOV, S.N., MANSFELD, G.O.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 40-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--GALLIUM ARSENIDE, SURFACE PROPERTY, CRYSTAL LATTICE STRUCTURE,
ELECTROAROUSTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/0998   STEP NO--UR/0449/70/004/001/0040/0044

CIRC ACCESSION NO--AP0053918
                         UNCLASSIFIED

UNCLASSIFIED

2/2   021
CIRC ACCESSION NO--AP0053918
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   ELECTROACOUSTIC TRANSFORMATIONS IN
THE INHERENT DEPLETED NEAR SURFACE LAYER OF LOW RESISTANCE GAAS AT
0.4-1.75 KHZ WERE STUDIED.   BY SUPERPOSITION OF AN EXTERNAL FIELD (FIELD
EFFECT). IT IS EVIDENTLY POSSIBLE TO RECONSTRUCT SUCH TRANSFORMATION
OVER A WIDE FREQUENCY RANGE.   THE LATTICE ABSORPTION OF SHEAR WAVES
DISTRIBUTED ALONG THE (110) AXIS OF BAAS CRYSTALS WAS MEASURED.

UNCLASSIFIED

1/2   015   UNCLASSIFIED   PROCESSING DATE--11SEP70

TITLE--FOSSIL ORGANIC SUBSTANCE AND OIL -U-

AUTHOR--MANSKAYA, S.M.

COUNTRY OF INFO--USSR

SOURCE--GEOKHIMIYA 1970, (3), 297-302

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--GEOCHEMISTRY, COAL, CRUDE OIL, CHEMICAL COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/2043   STEP NO--UR/0007/70/000/003/0297/0302

CIRC ACCESSION NO--AP0109975
??????????????   UNCLASSIFIED

CIRC ACCESSION NO--AP0109975
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS OF ORG. COMPOS. IN
RECENT FRESH WATER AND MARINE SEDIMENTS SHOW THE FORMATION WAYS OF THE
ORG. MATERIAL OF OLD SEDIMENTS, AS WELL AS THE INITIAL STAGES OF OIL
FORMATION. THE CONSIDERABLE RESISTANCE OF AROMATIC STRUCTURES OF
VEGETABLE COATS TO MICROBIOL. DESTRUCTION ENSURES THE SPECIFIC CHARACTER
OF THEIR TRANSFORMATION UNDER CONDITIONS OF DIAGENESIS. TYPICAL OF THIS
PROCESS IS THE ACCUMULATION OF CONDENSED AROMATIC FRAGMENTS
CHARACTERISTIC OF FOSSIL COALS, ASPHALTENES, AND KEROGEN. THE CITED
FACTS OF REVEALING AROMATIC STRUCTURES OF LIGNIN IN POLLEN AND SPORES,
AS WELL AS IN BROWN ALGAE, SHOWS THE STILL GREATER ABUNDANCE OF THIS
GEOCHEM. IMPORTANT COMPD. THAN WAS KNOWN EARLIER.

ZZZZZZZZZZZZ   UNCLASSIFIED

Titanium

TOMASHOV, N. D., CHERNOVA, G. P., and MANSKIY, YE. G., Institute of Physical Chemistry, Academy of Sciences USSR

"The Electrochemical Behavior of Metal Ceramic Titanium"

Abstract: The electrochemical behavior of specimens of titanium pro-
duced by powder metallurgy methods in 20% HCl is studied. The cathodic
and anodic behavior of specimens and the change in potential of inner
layers upon polarization of the surface are studied. The true surface
of the specimens is defined by measurement of the capacitance of the
binary layer. Cylindrical specimens 22 mm in diameter and 6 mm high
were pressed from electrochemical titanium powder with particle sizes
of 100-180 μ with microdendritic structure at pressures of 12-60 t/cm^2
with subsequent sintering in a vacuum at 1100°. It is established
that the decrease in active surface is more intensive than the decrease
in porosity, apparently related to the decrease in depth of penetration

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USSR

TOMASHOV, N. D., et al., Zashchita Metallov, Vol 10, No 1, Jan/Feb 74, pp 22-27

of the electrochemical process for specimens with lower porosity. The primary difference in electrochemical behavior of an electrode of porous titanium from that of compact titanium electrodes is the possiblity of occurrence of the process not only on the surface, but also in the volume of the specimen.

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UDC 669.71.472

USSR

ANTIPIN, L. N., VOLYNSKIY, V. V., MANSKIY, Ye. G., CHUB, V. Ya., and
KLIMENYUK, V. A.

"The Anode Effect During Electrolysis of Oxyfljorotitanium Fusions"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya
Publishing House, Vol VI, 1970, pp 77-81

Translation: The reasons for the appearance of the anode effect during elec-
trolysis of oxyfluorotitanium fusions on a carbon-graphite anode are investi-
gated. It is demonstrated that the anode effect arises as a result of the
formation of non-conducting oxides of the COF_2 type on the surface. The
formation of such compounds is accompanied by a worsening in wettability
and leads to passivation of the anode. Study of the critical density of
current in the oxyfluorotitanium fusion was done on an automatic device
for recording volt-ampere dependencies. It was demonstrated that the con-
centration of TiO_2 in the electrolyte exerts the primary influence on the
size of critical current density. Experimental results are given which show
the influence of TiO_2 concentration on the value of critical current density.
Four illustrations and 14 bibliographic entries.

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UDC 669.295.472

USSR

VOLYNSKIY, V. V., ANTIPIN, L. N., MANSKIY, Ye. G., and CHUB, V. Ya.

"The Interaction of Oxygen With the Carbon-Graphite Anode During Electrolysis of Fluorititanium Liquid Metals"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 89-93

Translation: Questions of the interaction of discharge oxygen with the carbongraphite anode during electrolysis of oxyfluorititanium liquid metals are considered. The effect of oxides on the electrochemical features of the anode is studied. A thermodynamic calculation is made which demonstrates the possibility of forming oxides of the $C_x O$ type. Such compounds are the basic reason for the slow drop in inverse electromotive force when a polarizing current is switched off. Two illustrations and five bibliographic entries.

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UDC 621.726.2

USSR

VOLYNSKIY, V. V., ANTIPIN, L. N., MANSKIY, Ye. G., DROZDENKO, V. A., and CHUS, V. Ya.

"An Investigation of the Cathode Process In Obtaining Titanium Powders of Increased Purity"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 81-85

Translation: The effect of the concentration of lower titanium compounds, cathode density of the current, and the material of the sub-layer on the course of the cathode process when obtaining titanium powders with a high degree of purity by the electrolyte method is studied. The mechanism of the electrode reaction with different content of trivalent titanium in the electrolyte is considered. The greatest effect on the purity of the titanium powder obtained is exerted by the concentration of $TiCl_2$ in the electrolyte. Technological conditions of electrolysis are selected which make it possible to obtain powder of the assigned granulometric composition with a 99.9% content of the primary metal. Four illustrations, one table, and ten bibliographic entries.

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USSR

UDC 669.295.472

VOLYNSKIY, V. V. ANTIPIN, L. N., MANSKIY, Ye. G., and CHUB, B. Y.

"Interaction of Oxygen with Carbon-Graphite Anode During Electrolysis of Fluorotitanate Melts"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, 89-93, (Translated from Referativnyy Zhurnal—Metallurgiya, No. 1, 1971, Abstract No.1 G194 by the authors).

Translation: Problems of the interaction of discharged O with the carbon-graphite anode during electrolysis of oxyfluorotitanate melts are studied. The influence of oxides on the electrochemical characteristics of the anode are studied. Thermodynamic calculation shows the possibility of formation of C_xO type oxides. These compounds are the primary cause of slow decreases in the reverse electromotive force when the polarizing current is turned off. 2 figures; 5 biblio; refs.

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USSR

UDC 669.295.472

ANTIPIN, L. N., BOLYNSKIY, V. V., MANSKIY, Ye. G., CHUB, V. Ya., and KLIMENYUK, V. A.

"Anode Effect During Electrolysis of Oxyfluorotitanate Melts"

Sb. tr. Vses. n.-i. i proyektn. in-t titana /[Collected works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, 77-81, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G193 by the authors).

Translation: The causes for the formation of the anode effect during electrolysis of oxyfluorotitanate melts on a carbon-graphite anode are studied. The anode effect arises as a result of formation of non-conducting oxides such as CGF_2 on the surface. The formation of these compounds is accompanied by worsening of wetability and leads to passivation of the anode. Study of the critical D in oxyfluorotitanate melts was performed on an automatic installation recording the volt-ampere functions. Primary influence on the value of critical D is that of the concentration of TiO_2 in the electrolyte. Experimental results are presented demonstrating the influence of TiO_2 concentration on critical D. 4 figures; 14 biblio.

refs.

1/1

Pesticides

USSR   UDC 632.95

MANSUR, N. A., and GIL'ZIN, V. M.

"Quantitative Determination of Chlorpicrin and Dichlorvos by Gas
Chromatography"

Tr. Vses. n.-it zerna i produktov yego pererabotki (Works of the All-
Union Scientific Research Institute for Grain and Grain Processed
Products), No 68, 1970, pp 41-44 (from Referativnyy Zhurnal Khimiya,
No 16 (II), 25 Aug 70, Abstract No 16 N667 by I. A. Revel'skiy)

Translation: Chloropicrin (I) and dichlorvos (II) are extracted from
grain and air with n-hexane and determined on a stainless steel column
(75 × 0.3 cm) filled with 5% SE-30 on celite 545 (80-100 mesh) with a
thermal conductivity detector at the following temperatures: column
100°, evaporator 180°, detector 200°; the flow rate of the He carrier
gas is 10 ml/min. The sensitivity of the method is 2×10^{-3} g I and
2×10^{-8} g II.

1/1

USSR

UDC: 519.2

MANSTAVICHYUS, E.

"On Evaluating the Residual Term in Integral Asymptotic Laws of
Arithmetic Functions"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1972, 12, No
1, pp 165-172 (from RZh-Kibernetika, No 10, Oct 72, abstract
No 10V51 [author's abstract])

Translation: Classes of real additive and multiplicative arith-
metic functions asymptotically distributed by a normal law are
considered. A method is indicated for obtaining estimates of
the residual term for wider classes of arithmetic functions.

1/1

USSR

UDC $[537.226 + 537.311.33]$: $[537+535]$

KAMILOV, I. K., MANSUROV, A. M.

"Electrical Characteristics of Mixed Copper-Cadmium Ferrites"

Translation: The authors measure the resistivity p (from 300 to 550° C) as well as the thermal emf α (up to 220° C) in polycrystalline ferrites $Cu_{1-x}Cd_xFe_2O_4$, where $0.1 < x < 0.7$. At 300° K, $p \simeq$ (1.2 to 5.3).10^4 ohm·cm, and $\alpha \simeq 360$ to 880 μ V/degree. The curve for p as a function of the temperature is exponential, with an activation energy of 0.30-0.42 ev and with a break at 130-140° C. With increasing temperatures, α drops. The variations with temperature of the concentration and mobility of the current carriers, computed from p and α, confirm the authors' opinion of the presence of both zone and skip mechanisms of migration in the ferrites. A. A. Samokhvalov

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USSR   UDC 681.325.5

MANSUROV, B. M., GORYACHEV, V. I., and ALEKSEYEV, YU. F.

"Adder-Subtractor"

USSR Authors' Certificate No 306462, Cl. G 06 f 7/50, filed 18 Sep 69, published 18 Oct 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B241P)

Translation:A Well-known adder-subtractor operates in decimal code with storage of the "five" digit; the decimal digit uses five flip-flops. In the proposed calculator the decimal digit uses four flip-flops, and the low-order digit control circuit contains a forbidden code state correction circuit, one output of which is connected to the input of the (n - 1)-th digit of the sum register, the other output to the input of the low-order digit of the sum register and to the input of the "five" digit add circuit, whose output is connected to the input of the (n - 1)-th digit of the sum register; and the output of the circuit of the low-order digit of the sum register is commutated with the input of the correction circuit. This makes it possible to cut down on equipment and increase the operating speed of the device.

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TITLE--HYDRODYNAMICS OF FLOW PLATES EQUIPPED WITH BAFFLES -U-

AUTHOR-(02)-MANSUROV, E.M., CHEKHOV, O.S.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM., MOSCOW, 1970, 46,1, 50-3

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS, MASS TRANSFER, HYDRODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0926   STEP NO--UR/0064/70/046/001/0050/0053

CIRC ACCESSION NO--AP0107455
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0107455
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDRAULIC RESISTANCE OF THE
  GAS LIQ. FILM ON FLOW PLATES WITH BAFFLES DECREASES WITH INCREASING GAS
  VELOCITY; THE MAX. MASS TRANSFER RATE IS OBSD. IN 2 ZONES: THE ENTRY
  SECTION (IN WHICH THE LIQ. IS DISPERSED) AND AT THE BAFFLE SEPN.
  SECTION. THE TOTAL AMT. OF LIQ. ON FLOW PLATES IS MUCH SMALLER AND THE
  SP. GR. OF THE LIQ. IS SMALLER THAN ON BUBBLE TRAYS.

UNCLASSIFIED

1/2   017   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ADSORPTION SHIFTS IN POTENTIAL AND ADSORPTION OF SURFACE ACTIVE
  CATIONS OF CADMIUM AND THALLIUM ON PLATINUM -U-
AUTHOR-(03)-BALASHOVA, N.A., KAZARINOV, V.YE., MANSUROV, G.N.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970: 6(1), 22-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, SURFACE ACTIVE AGENT, CADMIUM, THALLIUM, PLATINUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1152   STEP NO--UR/0364/70/006/001/0022/0028

CIRC ACCESSION NO--AP0121711
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121711
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIFIC CONCLUSIONS REGARDING THE
INFLUENCE OF SURFACE ACTIVE CATIONS ON H AND O ADSORPTION ON P CAN BE
DRAWN, ON THE BASIS OF THE CHARGE CURVES, ONLY IF THE QUANTITY OF ELEC.
CONSUMED IN THE ION ADSORPTION AND DESORPTION PROCESSES IS TAKEN INTO
ACCOUNT.   QUANT. RELATIONS ARE ESTABLISHED BETWEEN THE POTENTIAL SHIFT
IN SURFACE ACTIVE ION ADSORPTION AND THE QUANTITY OF ADSORBED GASES.
RELATIONS CANNOT BE ESTABLISHED BETWEEN THE SHIFT VALUES AND THE ION
ADSORPTION VALUES, SINCE THE QUANTITIES OF ADSORBED H AND O CANNOT BE
PRECISELY DETD. SEP., SINCE THEIR ADSORPTION POTENTIALS ON PT OVERLAP
CONSIDERABLY.   FACILITY: INST. ELEKTROKHIM., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70

TITLE--ELECTROCHEMICAL BEHAVIOR OF PLATINUM AND RHODIUM FILMS -U-

AUTHOR-(03)-MANSUROV, G.N., PETRIY, O.A., PAVLOVICH, V.K.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(2) 291

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ELECTROCHEMICAL REACTION, PLATINUM, RHODIUM, SITALL GLASS,
COPPER, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0468   STEP NO--UR/0364/70/006/002/0291/0291

CIRC ACCESSION NO--AP0107074
                                UNCLASSIFIED

CIRC ACCESSION NO--AP0107074

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   TRIANGULAR VOLTAGE PULSES WERE
USED FOR OBTAINING POTENTIODYNAMIC CURVES ON PT AND RH FILMS, SPUTTERED
IN VACUUM ON SITALL SUBSTRATES, IN H H SUB2 SO SUB4 AND IN THE PRESENCE
OF VARIOUS ADDNS. OF CUSO SUB4.   PARALLEL MEASUREMENTS WERE MADE ON
COMPACT METALS IN THE FORM OF WIRES.   THE H SECTIONS OF THE CURVES IN N
H SUB2 SO SUB4 ON FILMS AND COMPACT ELECTRODES COINCIDE.   ON FILMS A
SOMEWHAT EARLIER DEPOSITION OF O IS OBSD. AND ITS AMT. WAS SOMEWHAT
HIGHER THAN ON A COMPACT ELECTRODE.   THE NATURE OF FORMATION AND
SISSOLN. OF CU LAYERS ON FILMS AND COMPACT ELECTRODES IS IDENTICAL.   THE
SHAPE OF THE POTENTIODYNAMIC CURVES IN THE PRESENCE OF CU IONS IN SOLN.
WAS EQUAL FOR RH FILMS AND COMPACT ELECTRODES.   AS IN THE CASE OF PT,
MAX. WERE FOUND ON THE CURVES THAT CORRESPOND TO THE DISSOLN. OF THICK
AND THIN LAYERS AND CU ADATOMS.

MANSUROV, M. P.

"Mathematical Frequency Dictionary of the German Language"

Matematicheskiy Chastotnyy Slovar' Nemetskogo Yazyka [English Version Above],
Sverdlovsk, 1971, 56 pages, (Translated from Referativnyy Zhurnal, Kiberne-
tika, No 3, 1972, Abstract No 3 V612 K from the editors foreward).

Translation: This work is not a dictionary in the ordinary sense. This
book consists of a list of words modeling the statistical structure of any
mathematical text (considering the themes of texts being investigated) in
contemporary German. The practical value of the word is that knowledge of
these 2,100 words (if the elementary grammar and principles of word combina-
tion are known) will allow the readers to understand German scientific
mathematical text to more than 90%.

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USSR

UDC 621.376.5

ZHAVORONKOV, V. M., MANSUROV, N. A., MANSUROV, Yu. A., SOKOLOV, A. V.

"Powerful High-Voltage Pulse Modulator Made of Channelless Elements"

Elektrofiz. apparatura i elektr. izolyatsiya (Electrophysics Equipment and
Electrical Insulation), Moscow, Energiya Press, 1970, pp 75-82 (from Rzh-
Radiotekhnika, No 8, Aug 70, Abstract No 8 D298)

Translation: This article contains a description of the operating principle and
schematic of a pulse modulator made of magnetic elements and thyristors. The
modulator consists of an output pulse transformer, a shaping cascade and a
pulse compression cascade, a step-up pulse transformer, a reservoir capacitor,
a switching device, a starting module, a charge circuit, and a power rectifier.
A brief engineering description of the modulator is presented. The basic para-
meters of the modulator are the following: pulse power 50 megawatts with a
pulse length of 1-10 microseconds, voltage amplitude to 50 kilovolts and pulse
repetition rate of 1-200 hertz. The total commuting current passing through
the switching device reaches 20 kiloamperes. The modulator is fed directly
from a three phase AC network via an electromechanical converter. There are
three illustrations and a five-entry bibliography.

1/1

INOGAMOV, U. A., MANSUROV, P. KH., NIZAMETDINOVA, M. A., Institute
of Chemistry, Academy of Sciences Uzbek SSR

"Study of the Kinetics of Ion Exchange in an Ionite-Solution
System"

Abstract: The rate of ion exchange between the ionite and the
solution which occurs by penetration of the ion from the solution
into the ionite grain is determined by diffusion. During exchange,
the opposite process takes place: the desorbed ion is diffused
from the ionite grain interior into the external solution. This
makes ion distribution between the two phases a function of the
mobility of the exchanging ions. The objective of this study was
the ion exchange rate between solutions of nitric acid, potassium
and sodium chlorides using KU-2 cationite in K^+, Na^+ and H^+
forms. The ion exchange rate was determined from the hydrogen
ion exchange for potassium-sodium-cationite ions and from that of
potassium and sodium ions for the H cationite. The concentration
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INOGAMOV, U. A., et al, Uzbekskiy khimicheskiy zhurnal, No 3, 1971, pp 23-25

of the exchanging ions of the contacted solution was determined from the difference in concentration of the initial solution by titration both before and after contact with the ionite. It was found that the ion exchange process in the synthesis of sodium and potassium nitrites is determined by internal diffusion. The ion diffusion coefficients of H^+, K^+ and Na^+ increase in the order $D_H > D_{Na} > D_K$.

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USSR

UDC 541.183

ISMAILOV, N. P., MANSUROV, P. KH., and RUSTAMOV, KH. E., Tashkent Polytechnic Institute

"Thermodynamics of Ion-exchange Sorption of Anabasine and Lupinine on an H-Cation Exchanger"

Abstract: The authors studied thermodynamic potential, enthalpy and entropy in the sorption of anabasine and lupinine on an H-cation exchanger. Anabasine hydriodide and lupinine hydrochloride with a melting point of 253 and 212° C respectively were used. The experiments were staged on cation exchanger KU-2 under static conditions at 20 ± 1° C. Thermodynamic functions were determined through the thermodynamic ion-exchange equilibrium constant. The results indicate selective sorption of anabasine and lupinine on the cation exchanger.

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TITLE--DEVICE WITH A MAGNETOELECTRIC DRIVE MECHANISM FOR STUDYING THE
RHEOLOGICAL PROPERTIES OF INTERPHASE FILMS AT THE WATER PETROLEUM

AUTHOR-(02)-MANSUROV, R.I., PANCHENKOV, G.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHLEB. ZAVED, NEFT GAS 1970, 13(1), 92-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--TEST INSTRUMENTATION, RHEOLOGIC PROPERTY, SURFACE PROPERTY,
WATER, PETROLEUM, OPTIC PROPERTY, SHEAR STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/2062   STEP NO--UR/0152/70/013/001/0092/0096

CIRC ACCESSION NO--AT0122291
                            UNCLASSIFIED

CIRC ACCESSION NO--AT0122291
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHEAR STRENGTH OF THE
  INTERPHASE FILMS WAS TRANSMITTED BY MEANS OF A THIN FILAMENT, WHOSE
  DISPLACEMENT CORRESPONDED TO THE DEFORMATION OF THE FILM AND WAS
  MEASURED WITH AN OPTICAL SYSTEM. THE ADVANTAGES OF THE DEVICE WERE ITS
  SIMPLICITY AND PRECISION TO MAINTAIN A CONST. SHEAR STRENGTH, NO
  SENSITIVITY TO THE EFFECTS OF THE PETROLEUM MEDIUM, LOW VIBRATIONS, AND
  VERY BRIGHT DETN. RANGE, ALLOWING THE BEHAVIOR OF THE FILMS TO
  INSTANTANEOUS EFFECTS OF LOADS TO BE STUDIED. THE RHEOLOGICAL
  DEFORMATION CURVES COULD BE OBTAINED WITH A PRECISION OF 2-4PERCENT.
    FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW,
  USSR.

USSR

MANSUROV, R. M.

"Plastic Loading of Initially Isotropic Media with Deformational Anisotropy"

Uprutost' i Neuprugost'. Vyp. 2 [Elasticity and Nonelasticity, No 2 --
Collection of Works], Moscow, Moscow University Press, 1971, pp 137-145,
(Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract
No 10 V462, by R. A. Vasin).

Translation: A version is studied of the theory of flow in which it is
assumed that the deformational anisotropy is determined only by finite
values of plastic deformation ε_{ij}, while the flow function f is a quadratic
function of stress with coefficients A_k dependent on ε_{ij}. A method is des-
cribed for determining the values of A_k as functions of ε_{ij}. A comparison
is presented of experiments (thinwall tubular specimens of 38KhA steel under
the influence of axial extension and internal pressure; deformation trajec-
tories are two- and three-element broken lines) with calculations using the
theories of isotropic expansion, translational hardening and using the
version suggested; the advantages of the version suggested and good agree-
ment of calculations using this version with experimental curves are demon-
strated.
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Acc. Nr.: AP0042375   M   Ref. Code: UR0203
                                                    JPRS 5016

Direction of Ionospheric Current in Circumpolar Region

(Abstract: "Direction of the Ionospheric Current in the Circumpolar
Region," by S. M. Mansurov and L. G. Mansurova, Institute of Terrestrial
Magnetism, Ionosphere and Radio Wave Propagation; Moscow, Geomagnetizm i
Aeronomiya, Vol X, No 1, 1970, pp 154-156)
         The regular diurnal changes in the magnetic field at the earth's
surface near the poles (in the region where the corrected geomagnetic
latitude $|\phi_c| > 76°$) are approximated by the magnetic field of a hori-
zontal current constantly flowing in the ionosphere from the nighttime to
the daytime side. The direction of this current is deflected westward
from the midday meridian. The current intensity is maximum in the near-
midday hours of local summer and minimum in the near-midnight hours of
local winter. On the other hand, the angle α which the direction of the
current over a particular place forms with the earth-sun direction has a
minimum value at midday local summer and a maximum value at midnight local
winter. The angle α, in addition to seasonal and diurnal changes in LT,
experiences changes in UT during the course of the day, changes during
the 11-year cycle and an annual nonseasonal change. From the cyclic
changes of α it follows that there may be a correlation between the di-

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of the solar wind. Accordingly, using the known relation between the
velocity of the solar wind and the direction of the lines of flow at the
earth's orbit, the mean daily values V can be used in determining this
direction and it can be used as the direction of the spiral interplane-
tary magnetic field; this can be compared with the mean daily direction
of the ionospheric current equivalent to diurnal geomagnetic variations.
However, the direction of the current determined from geomagnetic varia-
tions registered at high-latitude stations is dependent not only on the
parameters of the interplanetary medium, but also on other factors: a)
the diurnal change in ionospheric ionization responsible for the diurnal
variation of d in LT; b) inclination of the earth's magnetic axis relative
to the axis of rotation, with which the diurnal variation of d in UT
(transpiring in antiphase in the northern and southern hemispheres) is
evidently related; c) inclination of the earth's axis of rotation to the
plane of the ecliptic, responsible for the seasonal variation of d. The
change in the direction of the current in the polar caps under the influence
of some of these factors attains an average of 20-25°. Therefore, before

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comparing α with the direction of the interplanetary magnetic field it is necessary insofar as possible to eliminate the effect of residual factors, that is, obtain some "general planetary" direction of the current α_p. A table gives the differences between the mean general planetary direction of the current α and the mean direction of the interplanetary field Ψ at the earth's orbit, computed from the mean daily values of velocity V of the solar wind.

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rection of the ionospheric current, equivalent to the mean general

and the direction of the inter-

UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--ALPHA HALOETHYL ESTERS OF FURAN,2,CARBOXYLIC ACID -U-

AUTHOR-(04)-SHOSTAKOVSKIY, M.F., SKVORTSOVA, G.G., AN, V.V., MANSUROV,
   YU.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,910
REFERENCE--OTKRYTIYA, IZOBRET., PROM, OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HALOGENATED ORGANIC COMPOUND, FURAN, CARBOXYLIC ACID ESTER,
   CHEMICAL PATENT, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1846   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132111
                    UNCLASSIFIED

CIRC ACCESSION NO--AA0132111
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALPHA HALOETHYL ESTERS OF
  FURAN,2,CARBOXYLIC ACID WERE OBTAINED BY TREATING THE VINYL ESTER OF
  FURAN,2,CARBOXYLIC ACID WITH H HALIDE AT ROOM TEMP.   FACILITY:
  NOVOSIBIRSK INSTITUTE OF ORGANIC CHEMISTRY.

UNCLASSIFIED

USSR   UDC 621.376.5

ZHAVORONKOV, V. M., MANSUROV, N. A., MANSUROV, Yu. A., SOKOLOV, A. V.

"Powerful High-Voltage Pulse Modulator Made of Channelless Elements"

Elektrofiz. apparatura i elektr. izolyatsiya (Electrophysics Equipment and
Electrical Insulation), Moscow, Energiya Press, 1970, pp 75-82 (from RZh-
Radiotekhnika, No 8, Aug 70, Abstract No 8 D298)

Translation: This article contains a description of the operating principle and
schematic of a pulse modulator made of magnetic elements and thyristors. The
modulator consists of an output pulse transformer, a shaping cascade and a
pulse compression cascade, a step-up pulse transformer, a reservoir capacitor,
a switching device, a starting module, a charge circuit, and a power rectifier.
A brief engineering description of the modulator is presented. The basic para-
meters of the modulator are the following: pulse power 50 megawatts with a
pulse length of 1-10 microseconds, voltage amplitude to 50 kilovolts and pulse
repetition rate of 1-200 hertz. The total commuting current passing through
the switching device reaches 20 kiloamperes. The modulator is fed directly
from a three phase AC network via an electromechanical converter. There are
three illustrations and a five-entry bibliography.

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Acc. Nr.: _APC042375_   Ref. Code: _UR0203_

JPRS 5016 z.

Direction of Ionospheric Current in Circumpolar Region

(Abstract: "Direction of the Ionospheric Current in the Circumpolar
Region," by S. M. Mansurov and L. G. Mansurova, Institute of Terrestrial
Magnetism, Ionosphere and Radio Wave Propagation; Moscow, Geomagnetizm i
Aeronomiya, Vol X, No 1, 1970, pp 154-156)
            The regular diurnal changes in the magnetic field at the earth's
surface near the poles (in the region where the corrected geomagnetic
latitude $|\phi_c| > 76°$) are approximated by the magnetic field of a hori-
zontal current constantly flowing in the ionosphere from the nighttime to
the daytime side. The direction of this current is deflected westward
from the midday meridian. The current intensity is maximum in the near-
midday hours of local summer and minimum in the near-midnight hours of
local winter. On the other hand, the angle α which the direction of the
current over a particular place forms with the earth-sun direction has a
minimum value at midday local summer and a maximum value at midnight local
winter. The angle α, in addition to seasonal and diurnal changes in LT,
experiences changes in UT during the course of the day, changes during
the 11-year cycle and an annual nonseasonal change. From the cyclic
changes of α it follows that there may be a correlation between the di-

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earth's orbit, the mean daily values V can be used in determining this direction and it can be used as the direction of the spiral interplanetary magnetic field; this can be compared with the mean daily direction of the ionospheric current equivalent to diurnal geomagnetic variations. However, the direction of the current determined from geomagnetic variations registered at high-latitude stations is dependent not only on the parameters of the interplanetary medium, but also on other factors: a) the diurnal change in ionospheric ionization responsible for the diurnal variation of δ in LT; b) inclination of the earth's magnetic axis relative to the axis of rotation, with which the diurnal variation of δ in UT (transpiring in antiphase in the northern and southern hemispheres) is evidently related; c) inclination of the earth's axis of rotation to the plane of the ecliptic, responsible for the seasonal variation of δ. The change in the direction of the current in the polar caps under the influence of some of these factors attains an average of 20-25°. Therefore, before

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rection of the ionospheric current, equivalent to diurnal geomagnetic
variations in the circumpolar region, and the direction of the inter-
planetary magnetic field. During years of high solar activity the average
annual value α = 45-50°, whereas in years of low activity α = 60-65°; this
can be related to change in the curvature of the spiral magnetic field
with a change in the mean velocity of the solar wind during the 11-year
cycle. This is confirmed by a direct comparison of α and the velocity V

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comparing α with the direction of the interplanetary magnetic field it is necessary insofar as possible to eliminate the effect of residual factors, that is, obtain some "general planetary" direction of the current α_p. A table gives the differences between the mean general planetary direction of the current $\bar{\alpha}$ and the mean direction of the interplanetary field $\bar{\psi}$ at the earth's orbit, computed from the mean daily values of velocity V of the solar wind.

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1/2   023   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--OXIDATIVE CHLOROPHOSPHORYLATION OF LOW MOLECULAR WEIGHT WASTES FROM
   POLYETHYLENE PRODUCTION -U-
AUTHOR-(03)-ZHUBANOV, B.A., MESSERLE, YE.P., MANSUROVA, R.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 48-52

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--POLYETHYLENE, ORGANIC PHOSPHORUS COMPOUND, CHEMICAL REACTION
   RATE, OXIDATION, PHOSPHORYLATION, INDUSTRIAL WASTE TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1916   STEP NO--UR/0360/70/020/002/0048/0052

CIRC ACCESSION NO--AP0123700
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0123700
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LOW,MOL.,WT. POLYETHYLENE (I)
RESIDUES WERE DISSOLVED IN HOT PCl_3. THE PASSAGE OF O OR AIR
THROUGH THE SOLN.   GAVE CHLOROPHOSPHORYLATED I, WHICH, WITHOUT
ISOLATION, WAS HYDROLYZED WITH ICE WATER TO I POLYPHOSPHONIC ACID (II)
CONTG. SMALLER THAN OR EQUAL TO 18.5P.   BESIDES $CH_2 CHPO(OH) CH_2$
CH_2 GROUPS, II ALSO CONTAINED CHICLCHPO(OH) $SUB2$ GROUPS RESULTING
FROM THE DIRECT ADDN. OF PCl_3 TO CH:CH GROUPS OF I. THE REACTION
HAD NO INDUCTION PERIOD AND IT WAS ZERO ORDER.   THE REACTION RATE
DEPENDED ON THE RATE OF BUBBLING OF O THROUGH THE REACTION MIXT.
FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

USSR   UDC 621.762.3

GRISHINA, A. I., MANTAROSHIN, A. P., PASHKOV, P. O.

"Structure and Certain Properties of Alloys Produced by Melting Mixtures of Metal Powders with Impact Loading"

Translation: The regularities of formation of solid solutions of substitution in systems Cu-Ni and Fe-Ni are studied. The structure and properties of the melted zone with impact compression of mixtures of powders are determined by the shape of the state diagram of the components included in the mixtures. A high heating rate and brief impact loading result in the formation of nonequilibrium solid solutions in the melted zone with high contents of impurities in the lattice. 6 Figures; 3 Tables; 3 Biblio. Refs.

1/1

USSR   UDC 621.762.001

LIKHOBABIN, V. A., MANTAROSHIN, A. P., PASHKOV, P. O., ROGOZIN, V. D.

"Shock Compacting of Metal Powders"

V sb. Metallovedeniye i prochnost' materialov. T. 3 (Physical Metallurgy and
Strength of Materials. Vol 3.— collection of works), Volgograd, 1971, pp 272-
285 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G384)

Translation: A study was made of the laws of shock compacting of metal powders,
and the basic parameters determining the mechanical properties of the material
obtained are discovered. Eight illustrations, 2 tables, and a 6-entry bib-
liography.

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1/2   051   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--CHARACTERISTICS OF THE HARDENING OF COPPER ON SUBJECTION TO SHOCK
WAVES -U-
AUTHOR-(03)-MANTAROSHIN, A.P., NAGORNOV, G.N., PASHKOV, P.O.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29,(2), 370-374

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--COPPER, METAL CREEP, CRYSTAL STRUCTURE, METAL HARDENING, SHOCK
WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0203   STEP NO--UR/0126/70/029/002/0370/0374

CIRC ACCESSION NO--AP0129459
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0129459
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE EFFECTS OF VARIOUS CONDITIONS
    OF SHOCK LOADING (SHOCK WAVES) ON THE HARDENING OF CU WERE STUDIED AND
    INTERPRETED IN TERMS OF THE STRESSED STATE CREATED IN THIS MATERIAL BY
    THE PASSAGE OF SHOCK WAVES.   THE STABILITY OF THE DISLOCATION STRUCTURE
    FORMED UNDER VARIOUS CONDITIONS WAS INVESTIGATED BY ANALYSING THE SHORT
    TERM CREEP CHARACTERISTICS.   THE STABILITY OF THE DISLOCATION STURCTURE
    WAS VERY SENSITIVE TO THE SHOCK WAVE PARAMETERS (AMPLITUDE, PULSE
    LENGTH), AND BY VARYING THESE PARAMETERS A WIDE RANGE OF MECHANICAL
    CHARACTERISTICS WAS OBTAINED.

UNCLASSIFIED

UDC 597.-91.51

USSR

MANTEYFEL', B. P., Professor (Editor)

Biologicheskiye Osnovy Upravleniya Povedeniyem Ryb (Biological Basis for Controling Fish Behavior)

Moscow, "Nauka," 1970, 302 pp

Translation:
Annotation: This collection of works deals with the general problem of fish behavior, morphofunctional characteristics of vision, visual signalization and orientation in fish, and also reactions to trawler fishing equipment.
Numerous published and original data on these problems are cited; some important theoretical hypotheses about characteristics of fish behavior, their ecology and evolution have been made which are of considerable importance for the development of means of controlling fish behavior for purposes of relationalizing the fishing industry.
The collection is intended for ichthyologists, fishermen, students of higher educational institutions, and fishery workers.

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USSR

MANTEYFEL', B. P., Nauka, 1970, 302 pp

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1/2   015   UNCLASSIFIED   PROCESSING DATE--23OCT7(
TITLE--MIXED ADSORPTION CATALYSTS FOR HYDROGENATION. XVI. RHODIUM PLATINU:
   AND RHODIUM PALLADIUM CATALYSTS ON SILICA GEL -U-
AUTHOR-(03)-ALCHUDZHAN, A.A., YEDIGARYAN, N.Z., MANTIKYAN, M.A.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(1), 3-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RHODIUM ALLOY, PLATINUM ALLOY, PALLADIUM ALLOY, CATALYST,
   HYDROGENATION, ADSORPTION, SILICA GEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1573   STEP NO--UR/0426/70/023/001/0003/0008

CIRC ACCESSION NO--AP0120352
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0120352
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS WORK INVESTIGATED THE EFFECT
OF PT AND PD ON THE CATALYTIC ACITIVITY OF RH ADSORBED ON A SIO SUB2
CARRIER. THE MIXED CATALYSTS CONTAINED 0.5 WT. PERCENT OF RH ON SIO
SUB2 AND VARIOUS AMTS. OF PT AND PD. IN ADDN. TO THESE RH PT-SIO SUB2
AND RH PD-SIO SUB2 CATALYSTS, SINGLE CATALYSTS RH-SIO SUB2, PT-SIO SUB2
AND PD-SIO SUB2 WERE ALSO USED FOR COMPARISON. CATALYTIC ACTIVITY WAS
MEASURED FOR HYDROGENATION OF BENZENE AT 90DEGREES, WITH VOL. RATIO H
SUB2:C SUB6 H SUB6 EQUALS 4:1, AND RATE OF H SUB2 GAS STREAM SUPPLY 1.5
AND 2.5 L.-HR. THE ACTIVITY WAS EXPRESSED IN PERCENT CONVERSION OF
BENZENE INTO CYCLOHEXANE. EXPTL. RESULTS SHOWED THAT RH-PT-SIO SUB2
CATALYSTS EXHIBIT GREATER ACTIVITY THAN THE RH-SIO SUB2 CATALYSTS, AND
THAT THE ACTIVITY INCREASES PROPORTIONALLY TO THE INCREASE OF THE
CONTENT OF PT. THE ACTIVITY OF CONCURRENTLY DEPOSITED RH PT-SIO SUB2
CATALYST IS CONSIDERABLY LARGER THAN THE ADDITIVE ACTIVITIES OF RH-SIO
SUB2 AND PT-SIO SUB2 CATALYSTS CONTG. THE SAME AMTS. OF RH AND PT. WHE
PD WAS INTRODUCED INTO THE RH-SIO SUB2 CATALYST, THERE WAS SOME NOT VER
PRONOUNCED BUT UNMISTAKABLE REDN. IN THE CATALYTIC ACTIVITY. THIS
CONTRASTING BEHAVIOR IS ASCRIBED TO DIFFERENT ELECTRONIC INTERACTIONS
BETWEEN RH AND PT, AND RH AND PD, SINCE ELECTRONIC STRUCTURES OF PT AND
PD ARE DIFFERENT. IT IS, HOWEVER, QUITE POSSIBLE THAT THE CARRIER SIO
SUB2 IS LARGELY RESPONSIBLE FOR THE EFFECT.   FACILITY: EREVAN.
POLITEKH. INST. IM. MARKSA, EREVAN, USSR.

UNCLASSIFIED

USSR   UDC 620.193.4

MULYAKAYEV, L. M., DUBININ, G. N., DALISOV, V. B., POLUBOYARTSEVA, L. A., MANTOROVA, T. M., and REIFER, A. A., Moscow Aviation Institute imeni Sergo Ordzhonikidze

"Corrosion Resistance of Diffusion Chrome Plated Steel in Certain Mediums"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 66-70

Abstract: A study was made of the corrosion behavior of chrome plated steels in a series of industrial aggressive media. Specimens of carbon steels (brands 35 and 45) and of OKh21N5T austenitic-ferritic class steel were chromated according to a technology developed by the Chair of Aviation Science of Metals of Moscow Aviation Institute; their diffusion layer was x-ray-analyzed and its thickness and microhardness measured. Corrosion resistance curves of brand 45 steel before and after diffusion chrome plating at 1100^0 for 10 hrs show that diffusion chromating protects brand 45 steel against corrosion in a 15% solution of tartaric acid and in a 3% solution of table salt, but does not reliably protect it in a concentrated freon solution widely used in refrigerating plants at operating conditions of 300^0 and 60 at. Results of corrosion tests under industrial conditions of up to two years duration of brand 35 steel and OKh21N5T steel, chromated and not chromated, are shown. The corrosion rate of brand 35 steel subjected to the action of an aggressive

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MULYAKAYEV, L. M., et al., Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 66-70

medium for up to 672 hrs with a diffusion coating is ten times lower than without a coating and approximately equal to the corrosion rate of OKh21N5T stainless steel in this medium. The use of a chromated diffusion coating to increase the corrosion resistance of OKh21N5T proved to be of little effect. Two figures, two tables, five bibliographic references.

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UDC 576.895.771.095.38:576.895.132.5

USSR

FEDDER, M. L., SUPRYACA, V. G., YAKUBOVICH, V. Ya., and MANIUKEOV, A. G.,
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"Susceptibility to Wuchereria bancrofti Cobbold, of Culex pipiens molestus
Forskal Mosquitoes Occurring in Moscow"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 5,
Sep-Oct 72, pp 599-601

Abstract: Culex pipiens molestus Forsk. mosquitoes from the City of Moscow
were successfully infected with Wuchereria bancrofti Cobbold microfilaria by
feeding them through a biological membrane (e. freshly removed skin of a white
mouse) with venous blood of wuchereriasis patients (one a native of East Africa
and another of Vietnam) mixed with a physiological saline solution and stored
at a temperature ≤ 5°. The W. bancrofti larvae reached the invasion stage 16-
17 days after infection of the female mosquitoes, which were kept at 23-26°
and a relative humidity of 60-75%.

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UDC 576.895.771:616.988.25-036.2(571.63)

USSR

FEDDER, M. L., REZNIK, YE. P., DANILEVSKIY, M. L., MANTUKHOV, A. G., and TROTSKAYA, D. F., Institute of Medicinal Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, USSR Ministry of Public Health, Moscow; Institute of Epidemiology and Microbiology, Vladivostok

"Data of the Epidemiological Evaluation of Natural Populations of Aedes togoi Theobald in the Soviet Primorye"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 301-307

Abstract: A. togoi mosquitos are carriers of Japanese encephalitis in a number of Southeast-Asian countries and also in the Primorskiy region of the Far Eastern USSR. Data on the duration of the gonotropic cycle of A. togoi in the Khasan region were collected in July-August 1969 at a number of points of the region; the cycle was found to last seven to eight days. Females, which grew for two or more gonotrophic cycles, were most dangerous, respect to Japanese encephalitis and wuchereriosis, that is 14-16 day-old females for encephalitis and 21-24 day-old females for wuchereriosis. The age composition of natural populations was determined from autopsy of 2,123 females. A total of 11.5% of attacking encephalitis-carrying mosquitos were females, while

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FEDDER, M. L., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 301-307

only 2.9% of the wuchereriosis-carrying attacking mosquitos were female. At peak activity, there were 9.8 females per hour attacking one person among the encephalitis-carrying mosquitoes, while only 3.3 females per hour attacked one person among the wuchereriosis-carrying mosquitoes.

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